

REMARKS

Upon entry of this amendment, claims 1-13 are all the claims pending in the application. Claims 8-13 are added as new claims. No new matter has been added.

Applicants note that a number of editorial amendments have been made to the specification and abstract for grammatical and general readability purposes. Due to the number of changes made, a substitute specification and abstract are submitted herewith. No new matter has been added. Also enclosed is a marked-up copy of the original specification and abstract showing the changes incorporated into the substitute specification and abstract.

I. Claim Rejections Under 35 U.S.C. 102(b)

The Examiner has rejected claims 1-3 and 7 under 35 U.S.C. § 102(b) as being anticipated by Gupta et al. (U.S. 6,223,685).

Claim 1, as amended, recites that the dielectric material comprises one of silicone, silica glass and silicon nitride; and that the impurity comprises one of arsenic, phosphorus, boron, aluminum and antimony. Applicants respectfully submit that Gupta fails to disclose or suggest at least these features of claim 1.

Gupta discloses a method for reducing fluorine absorption in films deposited within a substrate processing chamber. During a cleaning procedure, fluorine atoms from the clean plasma become trapped within the walls of the substrate processing chamber (see col. 2, lines 5-7). During a subsequent processing step, these fluorine atoms can be released from the chamber walls and can be absorbed upon deposition of another layer (see col. 2, lines 9-14).

In order to suppress the release of fluorine atoms from the chamber walls, Gupta discloses the formation of a plasma which forms a seasoning layer covering the fluorine atoms,

thereby suppressing the escape of fluorine atoms during a subsequent deposition (see col. 11, lines 1-5; and col. 11, line 53 through col. 12, line 7). Thus, in Gupta, the goal is to suppress the release of fluorine atoms from the chamber walls, wherein the fluorine atoms are present due to the cleaning procedure that is performed in the processing chamber (see col. 2, lines 5-9).

As noted above, claim 1 has been amended to recite that the impurity comprises one of arsenic, phosphorus, boron, aluminum and antimony. However, as Gupta is concerned with suppressing the escape of fluorine atoms from chamber walls that are deposited during a cleaning procedure, Applicants respectfully submit that Gupta does not disclose or suggest that the impurity comprises one of arsenic, phosphorous, boron, aluminum and antimony.

That is, in Gupta, the only concern is to suppress the escape of contaminants, such as fluorine atoms, that are trapped during a cleaning procedure. As there is no suggestion in Gupta that any of arsenic, phosphorous, boron, aluminum or antimony would be trapped during a cleaning procedure, Applicants respectfully submit that Gupta fails to disclose or suggest that the impurity comprises one of arsenic, phosphorous, boron, aluminum or antimony, as recited in claim 1.

Further, as noted by the Examiner in the Office Action, Gupta discloses that areas of the chamber may include ceramic lining or other insulation material (col. 2, lines 7-9). Gupta, however, does not disclose a specific material that is used. Accordingly, as claim 1 has been amended to recite that the dielectric material comprises one of silicone, silica glass and silicon nitride, Applicants respectfully submit that Gupta fails to disclose or suggest such a feature.

In view of the foregoing, Applicants submit that claim 1 is patentable over Gupta, an indication of which is respectfully requested. Claims 2, 3 and 7 depend from claim 1 and are therefore considered patentable at least by virtue of their dependency.

II. Claim Rejections Under 35 U.S.C. 103(a)

A. The Examiner has rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al. in view of Roderick et al. (U.S. 6,043,607).

Claim 4 depends from claim 1. Applicants respectfully submit that Roderick fails to cure the deficiencies of Gupta, as discussed above, with respect to claim 1. Accordingly, Applicants submit that claim 4 is patentable at least by virtue of its dependency.

B. The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al. in view of Roderick et al. and further in view of Blalock et al. (U.S. 6,095,159).

Claim 5 depends from claim 1. Applicants respectfully submit that Roderick and Blalock fail to cure the deficiencies of Gupta, as discussed above, with respect to claim 1. Accordingly, Applicants submit that claim 5 is patentable at least by virtue of its dependency.

C. The Examiner has rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al. in view of Baldwin, Jr. et al. (U.S. 6,280,563).

Claim 6 depends from claim 1. Applicants respectfully submit that Baldwin, Jr. fails to cure the deficiencies of Gupta, as discussed above, with respect to claim 1. Accordingly, Applicants submit that claim 6 is patentable at least by virtue of its dependency.

III. New Claims

Claims 8-13 have been added as new claims.

Claim 8 recites the feature of a plasma source that is operable to draw out an impurity from a portion of the container such that the impurity is implanted into a substrate in a

substantially even manner. Applicants respectfully submit that Gupta fails to disclose, suggest or otherwise render obvious such a feature.

As discussed above, Gupta discloses the formation of a plasma which is used to create a seasoning layer that covers the fluorine atoms in the chamber walls in order to suppress the escape of fluorine atoms (see col. 11, lines 1-5).

Thus, as the goal in Gupta is to suppress the discharge of fluorine atoms from the chamber walls, it is clear that the plasma generated in Gupta does not act to draw out the fluorine atoms such that the fluorine atoms are implanted in a substrate in a substantially even manner. In direct contrast, the plasma induced in Gupta is used to suppress the release of the fluorine atoms, and therefore, the plasma source in Gupta clearly does not operate so as to implant fluorine atoms in a substrate in a substantially even manner.

In view of the foregoing, Applicants respectfully submit that that Gupta fails to disclose or suggest the feature of a plasma source operable to draw out an impurity from a portion of the container such that the impurity is implanted into a substrate in a substantially even manner. Accordingly, Applicants submit that claim 8 is patentable over the cited prior art, an indication of which is respectfully requested.

Claims 9-13 depend from claim 8 and are therefore considered patentable at least by virtue of their dependency.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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